

A NEW SPECIES OF *Xanthocnemis* Tillyard (ODONATA: COENAGRIONIDAE) FROM THE CHATHAM ISLANDS, NEW ZEALAND

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Abstract. *Xanthocnemis tuanuii* n.sp. is described from Chatham Island, New Zealand. It is closely related to the New Zealand mainland species *X. zealandica* but differs largely in the form of the male superior appendages. There also appear to be consistent differences in colour pattern.

The earliest description of a New Zealand Coenagrionid was that of *Telebasis zealandica* by McLachlan (1873). Tillyard (1913) subsequently erected the genus *Xanthocnemis* for McLachlan's species and synonymized other species which had been described from the main islands of New Zealand (*Telebasis sobrina* McLachlan, 1873, *Xanthagrion antipodum* Selys, 1876) with *X. zealandica* (these synonymies will be further discussed in a revision of the genus being prepared by the present author).

However, the Chatham Island *Xanthocnemis* was recognized as being different from those familiar to collectors on the main islands of New Zealand. Hutton (1898) noted differences and assigned Chatham Island specimens to *X. sobrina* (followed and quoted in Hudson 1904), and Tillyard (1913) commented on their large size, "specimens . . . from Chatham Island are exceptionally fine, and the largest of the whole series".

The Chatham Islands are 800 km east of the South Island, New Zealand. In January, 1980, I collected Odonata in the undisturbed rainforest area at the southern end of Chatham Island, which is the northern and largest island of the group. Differences between the *Xanthocnemis* population of that island and those of the main islands of New Zealand were noted during field observations; and from further morphological examination it is concluded that this island population warrants specific recognition. *X. zealandica* was not found on Chatham Island.

Xanthocnemis tuanuii Rowe, sp.n.

(Figs. 1-6)

MALE (based on 11 specimens)

Length 33 - 36 mm (anterior margin of head — posterior margin of abd X).

Head. Labrum buff with three triangular basal black spots, lateral spots sometimes reduced. Postclypeus yellow-orange. Frons bronze-black. Vertex, anterior area orange; base bronze-black, the straight or slightly convex division lying below antennae. Epicranium bronze-black with pair of large red postocular spots joined by red line across posterior margin to form a "dumb bell". Postocular spots sometimes bifurcated or reduced. Antennae with orange distal annulus on basal segment; second segment large, usually red; other segments bronze-black. Eyes red. Back of head pale with small elongated yellow-orange splash on eye margin. Frontal and dorsal surfaces with thick covering of long black hairs.

Prothorax. Anterior lobe orange. Dorsum bronze-black with lateral orange triangles, vertices opposing. Two osculating orange spots on posterior area of central lobe (missing in one specimen). Lateral areas orange. Posterior lobe narrow, orange with fringe of long black hairs; central area of posterior lobe black in one specimen.

Synthorax. (Fig. 1). Mesepisternum, mesepimeron bronze-black with orange markings; ventrally yellowish-buff. Diffuse black spot below metathoracic spiracle. Prothorax and synthorax closely covered with long black hairs overall.

Legs. Coxae and trochanters orange with black markings. Femur and tibia red-orange with small black basal markings and two rows of long black spines.

Wings. Hindwing length 18.5 - 20.5 mm. Venation dark red-brown. Pterostigma red, covering $1\frac{1}{2}$ (rarely 1) cells.

Abdomen. Red with black (dorsal) markings as follows. Abd I with bilobed basal spot (absent in 2 of 11 specimens). Abd II-V with apical rings. Abd VI with apical spots and incomplete ring (markings fused in 3 of 11 specimens). Abd VII with pair of longitudinal bars and apical ring, 9 of 11 specimens with a narrow red expansion to produce a red † dorsal mark. Abd VIII with pair of longitudinal bars. Abd IX, X with basal spots (absent in 2 of 11 specimens). Abd I, II covered in long black hairs.

Anal appendages. (Figs. 2-5). Superiors bifurcated. Upper lobe red-orange with heavy black dorso-interior spine and small black ventrodistal spine. Lower lobe paler. Massive, especially in caudal view, converging, tips opposing, tip drawn into massive dorsally directed projection. Inferiors approximately $1\frac{1}{2}$ x length of superiors, red-orange, forcipate, opposing tips black.

Penis. Broader than in *X. zealandica*, shaft with lateral flanges lying below curved horns of glans (Fig. 6).

FEMALE heterochrome (based on 4 specimens)

Head. Labrum buff with broad black basal line. Postclypeus buff. Frons bronze-black. Epicranium as for male except "dumb-bell" buff. Antennae as for male.

Prothorax. Dorsally bronze-black with yellow lateral surfaces. Anterior lobe broad, yellow. Central lobe with yellow lateral spots. Pair of central spots on posterior edge of central lobe in 2 of 4 specimens. Posterior lobe narrow, yellow with fringe of long black hair.

Synthorax. Largely as for male but markings yellow on bronze-black. Large yellow triangle with apex directed posteriorly at centre of anterior edge of mesepisternum.

Legs. Yellow with heavy black markings. Femur with broad, black, exterior line. Spinose.

Wings. As for male.

Abdomen. Dorsally bronze-black, ventrally and laterally yellow. Abd I with (in 3 of 4 specimens) a yellow spot at posterior dorsal margin. Abd III - VI with incomplete yellow rings at anterior edge.

FEMALE androchrome (based on 6 specimens)

Colour pattern largely as in male with the following exceptions.

Head. Labrum buff, basal spots joined by basal black line. Epicranium postocular spots reduced.

Prothorax. Central spots on posterior margin of median lobe frequently absent.

Synthorax. Large red triangle at anterior edge of mesepisternum.

Abdomen. Black markings on abdomen considerably more extensive than in male. Abd VIII - X dorsally black.

Specimens examined. Holotype ♂, Allotype ♀ androchrome, taken *in copula*. CHATHAM I: brown water, forest stream on southern bank of Tuku a tamatea R, approximately 800 m into the forest east of the ornithologists' camp 'Tuku Base', near NZMS 240 879916 (interpolated), approximately 44°04'S, 176°38'W, 22.I.1980, R.J. Rowe. Both deposited in Auckland Institute and Museum.

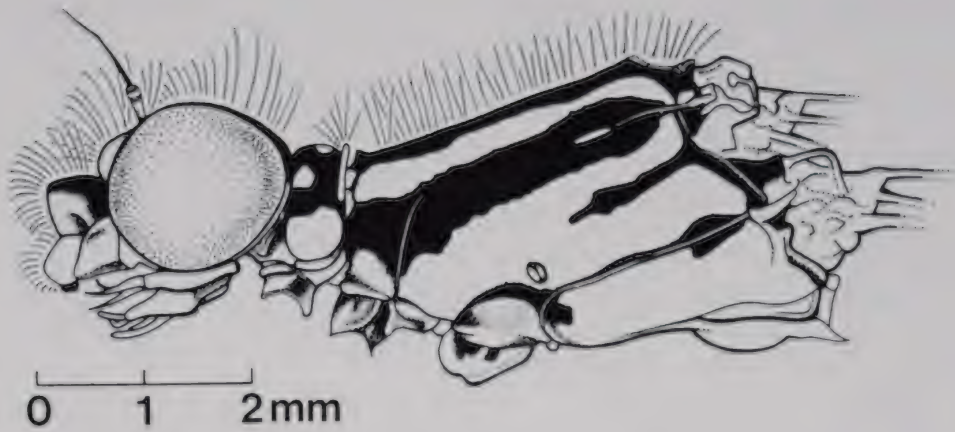
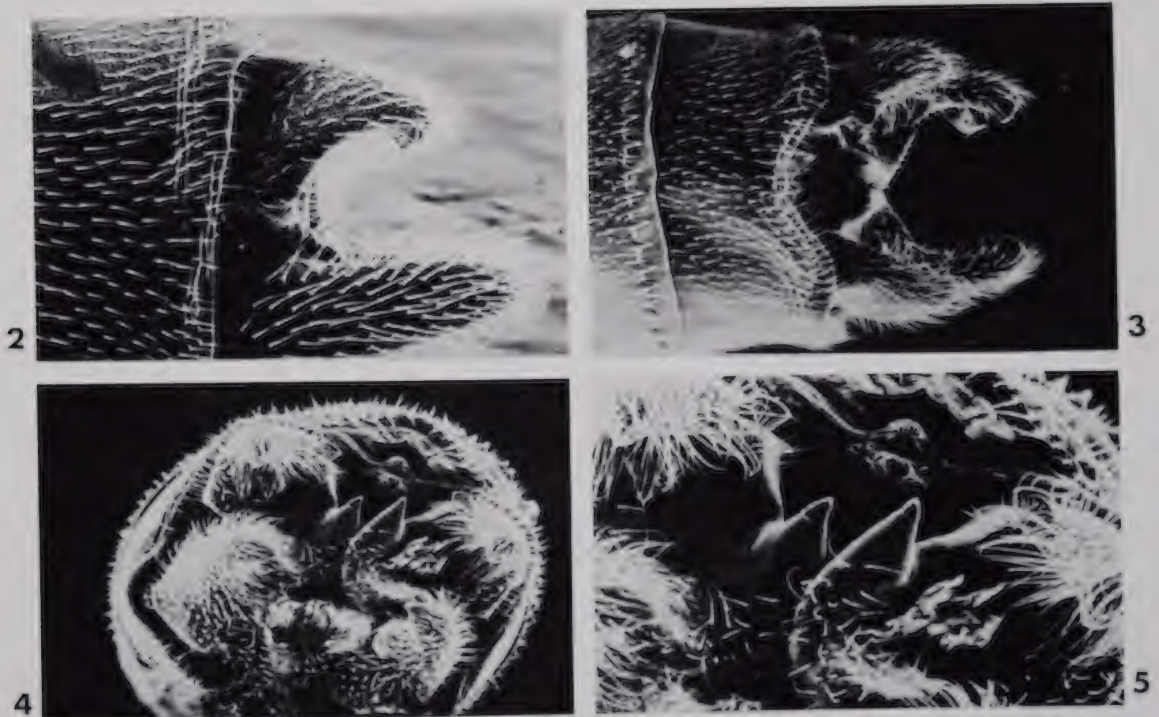


Fig. 1. *Xanthoememis tuanuii* n.sp. Holotype ♂. Head and thorax, lateral (length of dorsal hairs indicated).



Figs. 2-5. *Xanthoememis tuanuii* n.sp. ♂ from 'Tuku Base'. Anal appendages. 2. Lateral. 3. Dorsal. 4. Caudal. 5 Caudal, detail.



Fig. 6. *Xanthocnemis tuanuii* n.sp. ♂ genitalia, ventral.

Paratypes. Five pairs taken *in copula*, same data as holotype. Deposited in: Auckland Institute and Museum; Entomology Division D.S.I.R.; Canterbury Museum; British Museum (Natural History); Australian National Insect Collection, C.S.I.R.O. Four males, same data as holotype, retained in the author's collection.

Other material. CHATHAM I. (Canterbury Museum) 3 ♂♂, 1 ♀, Chatham, 24 I.1924, C. Lindsay. (D.S.I.R. Entomology Division) 3 ♂♂, 2 ♀♀, L. Te Roto, Awatotara Tableland; 2 ♂♂, 1 ♀, Kaingaroa, Waitangi, -II. 1967, G. Ramsay; ♂, ♀ Awatotara, Waikato Pt., -II. 1967, G. Kuschel. (Rowe Collection) 6 ♂♂, 5 ♀♀, Tuku a tamatea R., bush runnels near Tuku Base, -I.1980, R.J.R.

Neither Hutton's (1898) material nor the material viewed by Tillyard could be located.

The most obvious point of contrast with *X. zealandica* (McLachlan) is the shape of the male superior appendage; this difference is especially apparent in the caudal view of the lower lobe. Lateral flanges on the penis are absent in *X. zealandica*. In colour pattern, the diffuse black spot below the metathoracic spiracle appears to be absent in all *X. zealandica* examined, and *X. tuanuii* is markedly more hairy than *X. zealandica*. In the female the pair of large triangles at the dorso-anterior edge of the synthorax of *X. tuanuii* is a distinguishing character. The high frequency of the female androchrome morph in *X. tuanuii* (8 of 14 in the sample collected) contrasts with *X. zealandica* where this morph makes up approximately 20% of the population.

The name *tuanuii* is proposed for this species in honour of Mr Manuel Tuanui of Chatham Island.

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